Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Revision of the Commission's Rules	)	CC Docket No. 94-102
To Ensure Compatibility with	)	
Enhanced 911 Emergency	)	
Calling Systems	)	

To: The Commission

NEXTEL COMMUNICATIONS, INC. AND NEXTEL PARTNERS, INC.
JOINT REPORT ON PHASE II LOCATION TECHNOLOGY IMPLEMENTATION AND REQUEST FOR WAIVER

I. INTRODUCTION

Pursuant to the Fourth Memorandum Opinion and Order ("Fourth MO&O") of the Federal Communications Commission ("Commission") in the above-referenced docket, and the September 14, 2000 Public Notice of the Wireless Telecommunications Bureau ("Bureau"),[1] Nextel Communications, Inc. and Nextel Partners, Inc. (hereinafter collectively "Nextel"), jointly submit this Report on their implementation plans for providing Phase II Enhanced 911 ("E911") services.[2]

Nextel is a provider of wide-area Specialized Mobile Radio ("SMR") services utilizing Motorola Inc.'s ("Motorola") iDEN handset and network technology. Motorola is the world's only manufacturer of iDEN handsets, and Nextel is one of only two iDEN

[1] Fourth Memorandum Opinion and Order, CC Docket No. 94-102, FCC 99-326, released September 8, 2000 ("Fourth MO&O"); Public Notice, "Wireless Telecommunications Bureau Provides Guidance on Carrier Reports on Implementation of Wireless E911 Phase II Automatic Locations Identification," DA 00-2099, released September 14, 2000 ("Public Notice").

[2] Nextel Partners is an affiliate of Nextel Communications, Inc. and is constructing and operating iDEN wireless communications systems in numerous rural and suburban markets throughout the Nation under the Nextel brand. As a provider of iDEN services, Nextel Partners will be implementing the same E911 Phase II location technology that is implemented throughout Nextel's service areas. Thus, Nextel and Nextel Partners are jointly submitting this report.

providers offering service in the United States.[3] Nextel's wide-area SMR services provide a combination of mobile telephone, push-to-talk dispatch services, data and Internet services, and two-way messaging all in a single handset.

As a provider of wireless services to some six million domestic subscribers, Nextel believes it is its civic responsibility to fulfill the Commission's Phase II E911 service obligations and to achieve the location accuracy levels desired by public safety officials. In addition, as a provider of wireless services that are particularly useful to business subscribers, Nextel firmly believes that location services will provide a valuable commercial enhancement to its service offerings. Thus, Nextel has taken very seriously the Commission's E911 requirements, committing significant resources to achieving both Phase I and Phase II E911 capabilities.

Nextel has upgraded its network to transmit, where requested by a Public Safety Answering Point ("PSAP") that is capable of accepting Phase I information, the call back phone number and cell site location of the 911 caller. Since deploying these technical upgrades throughout its network, Nextel has committed numerous personnel to the task of implementing Phase I, including coordinating with PSAPs on where to send 911 calls from each of Nextel's cell sites and cell sectors,[4] inputting the necessary data into the Automatic Location Information ("ALI") databases, working with Local Exchange Carriers ("LECs") to order the necessary trunking equipment to transmit E911 information from Nextel to the PSAP, negotiating contractual agreements with PSAPs where necessary,

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[3] Southern Linc, a subsidiary of the Southern Company, provides iDEN services in the Southeastern United States to approximately 200,000 subscribers. *See* www.southernlinc.com. Additionally, Nextel understands that a new provider of iDEN services recently entered the marketplace in parts of California.

[4] Because the Commission's E911 rules require that "911" calls go to the "appropriate" PSAP, Nextel must work with all of the PSAPs in a particular geographic area to determine which PSAP is the "appropriate" PSAP for calls originating from each of Nextel's cell sites in that area. This requires cooperation and coordination among the PSAPs, as well as with Nextel. To date, Nextel has completed this task in numerous areas, including portions of North Carolina, South Carolina, Colorado, Florida, Georgia, Virginia, Rhode Island, Washington State and Texas.

and working with state legislatures to amend E911 statutes where necessary to accomplish the provision of wireless E911 services.

At the same time, Nextel has dedicated numerous engineering and business personnel to the task of performing the necessary due diligence on all available iDEN-capable (or potentially iDEN-capable) ALI technologies that may assist Nextel in achieving its Phase II E911 obligations. Since 1998, Nextel has reviewed 15 different location technology proposals for providing ALI capabilities on the iDEN network.

II. NEXTEL'S TECHNOLOGY CHOICE

Having performed substantial analysis of potential location solutions, Nextel provides this Report on its Phase II E911 technology choice. Nextel's business, strategy, technical and engineering personnel have carefully weighed Nextel's options. At this time, all relevant engineering, networking, operational, and economic data point to only one feasible choice: implementation of a handset based Assisted Global Positioning System ("A-GPS") location technology.

Accordingly, based on all of the information currently available, Nextel respectfully submits the following information, as required by the Bureau's Public Notice, and seeks a waiver of the Commission's rules to permit the following deployment schedule for Nextel's Phase II E911 services. Based on Nextel's field trial of A-GPS in a Code Division Multiple Access ("CDMA") handset,[5] Nextel and Motorola believe that the A-GPS technology will be able to locate an iDEN subscriber within **50 meters** 67% of the time and within **150 meters** 95% of the time. Additionally, Nextel believes it can deploy the A-GPS solution in its iDEN handsets in the following time frames and at the following penetration rates:

(i) initial deployment will begin October 1, 2002;
(ii) 10% of all new iDEN handsets sold beginning December 31, 2002;

[5] As discussed below, no iDEN A-GPS handset exists today; accordingly, Nextel's field trials used available technology.

(iii) 50% of all new iDEN handsets sold by December 1, 2003;
(iv) 100% of all new iDEN handsets sold by December 1, 2004; and
(v) 95% of Nextel's entire iDEN customer base by December 31, 2005.[6]

To further enhance the potential life-saving capabilities of wireless location services and demonstrate its commitment to enhancing the usefulness of all wireless E911 services, Nextel proposes, upon Commission grant of a waiver (or other relief) to implement the deployment schedule provided herein, to accompany its Phase II ALI deployment schedule with a commitment of $25 million to be used by the public safety community over the next two years for the purpose of upgrading their PSAP facilities to accept location information.[7] Only when carriers can transmit accurate location information **and PSAPs can make use of it** will wireless users realize the true benefits of wireless E911 services.

Nextel's deployment plan, therefore, addresses two critical public safety needs: (1) the need for a cooperative effort among PSAPs and carriers to ensure that all facets of the 911 call process are location-capable; and (2) the need for <u>accurate</u> information that will, in many cases, provide valuable assistance to public safety emergency services personnel. Achieving each of these objectives will promote the public interest by helping public safety officials save lives; therefore, Nextel will not utilize technologies that fail to meet an acceptable accuracy level.

PSAP Readiness. The key public interest benefit in Nextel's proposal to provide $25 million over the next two years to assist PSAPs in their system upgrades is the

[6] Thus, although Nextel will initiate handset deployment approximately one year after the Commission's current requirement, it plans to comply with the Commission's deadlines for achieving full handset deployment.

[7] Nextel's financial commitment would likely be in the form of a Phase I and/or Phase II PSAP upgrade fund made available through one of the public safety associations, such as the Association of Public-Safety Communications Officials ("APCO"). By accessing this fund, individual PSAPs could purchase computer terminals, computer software, trunking capabilities and other equipment they otherwise may not have the ability to buy. These upgrades, financed at least in part by Nextel, would result in better location capabilities for all wireless 911 callers.

recognition that, whether or not carriers have the capability of transmitting location information, emergency service providers will have no means to locate wireless 911 callers unless they are capable of accepting and using that information. Nextel's proposal further acknowledges the cost hurdles currently faced by PSAPs (and state and local governments) in upgrading their systems for Phase I and Phase II readiness.

The deployment of state-of-the-art Phase II location capabilities is not an issue faced solely by the service providers. PSAPs must make significant changes to their networks, including computer hardware and/or software upgrades, as well as other trunking and technological changes, to accept the mapping and location information provided by wireless Phase II location services. As APCO has stated, the "high costs of implementing Phase II, and related problems with the 'cost recovery' requirements in the Commission's rules [which have since been eliminated], are some of the principal reasons why few wireless users will have Phase II capability by October 1, 2001."[8] Nextel's monetary contribution is intended to facilitate PSAP upgrades and LEC cooperation where they otherwise would be delayed – possibly long past October 2001 in some cases.

Accurate Location Information. Nextel believes that the key to beneficial wireless E911 services is the accuracy with which the caller can be located. As the Commission has stated, "[t]he life-saving advantage of being able to know accurately and quickly the location of an emergency is obvious. Emergency police, fire, and medical teams cannot assist a person they cannot find."[9] Although the Commission's rules acknowledge and allow for some accuracy variance among alternative

[8] Reply Comments of APCO on Wireless E911 Phase II Automatic Location Identification Requirements, CC Docket No. 94-102, July 2, 1999 (hereinafter "APCO July 1999 Reply Comments"), at p. 3.
[9] Third Report and Order, 14 FCC Rcd 17388 (1999)("Third Report and Order") at para. 2.

technologies,[10] Nextel has concluded that the best interests of its subscribers require deployment of the highest accuracy solution available to best assist emergency services personnel in locating and aiding them. Sacrificing long-term accuracy, and its resultant public safety benefits, for the sake of somewhat speedier deployment of a less accurate location capability ultimately robs consumers of the maximum life-saving benefits of Phase II E911 services.

Nextel's proposal, therefore, focuses on the true benefit that Phase II can provide the public safety community and wireless users: the ability to **accurately locate** the wireless 911 caller. Nextel's technology choice, moreover, is based on the premise that, to provide real life-saving services to the public, emergency services personnel must have the best and most accurate location information possible on Nextel's wireless system.

In Exhibit A, attached hereto, Nextel provides three maps. The first depicts a 50-meter radius around an emergency caller located in Dupont Circle in Washington, D.C. The second depicts a 100-meter radius around that same caller, and the third is a 300-meter radius around the caller. These maps graphically depict the real differences in providing public safety personnel 50, 100 and 300-meter location information. In this particular example, the 50-meter information limits the emergency services personnel search to the area within Dupont Circle itself. The 100-meter information requires that public safety officials search not only the park, but also portions of nine different city blocks, many of which are very congested, as well as the traffic circle around Dupont Circle. As APCO, the National Emergency Number Association ("NENA") and the National Association of State Nine One One Administrators ("NASNA") have stated, a

[10] *See* Third Report and Order at paras. 72 and 74, establishing the handset accuracy at 50 meters 67% of the time and 150 meters 95% of the time, and the network accuracy requirements at 100 meters 67% of the time and 300 meters 95% of the time.

125-meter accuracy requirement does not provide adequate assistance to emergency services personnel since such an area "could easily encompass numerous structures with different street addresses, including high-rise residential buildings and commercial buildings."[11]

The 300-meter circle is provided simply to demonstrate the significant contrast from 50 and 100 meters. The 300-meter information simply would not provide public safety officials significant incremental benefit from the information that can be provided in Phase I E911. Using the 300-meter location information, emergency services personnel would be forced to search numerous city blocks, public roadways, and congested residential and commercial areas. Deploying location services that provide inferior accuracy, certainly 300-meter accuracy and even 100-meter accuracy, will be of little assistance to either public safety agencies or wireless 911 callers – whether introduced today, on October 1, 2001 or later.

Waiver is in the Public Interest. In granting a waiver of the Phase II E911 rules to Voicestream Wireless ("Voicestream"), the Commission recognized that waivers may be in the public interest.[12] In the case of Voicestream, the Commission concluded that Voicestream's "proposed system will provide meaningful public safety benefits and may be the only solution available for Global System for Mobile Communications ("GSM") air interface in the near future."[13] Nextel, like Voicestream, is proposing a Phase II deployment plan that benefits public safety via the provision of accurate, useful ALI information within a reasonable time frame and, in addition, Nextel is proposing a means to contribute to the upgrade of PSAP systems so they can make use of that information.

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[11] Comments of APCO, NENA and NASNA, CC Docket No. 94-102, filed September 25, 1996, at p. 3.
[12] Fourth MO&O at para. 55.
[13] *Id.* at para. 2.

Additionally, like Voicestream, Nextel has access to only one ALI solution that can provide accurate Phase II location information on its iDEN network.

Because Nextel's iDEN technology is provided by only one manufacturer worldwide, and because Nextel is essentially the only "market" for iDEN location services that meet the Commission's Phase II requirements, many location technology vendors showed little or no interest in customizing their Phase II location technology for iDEN.[14] Nextel sought proposals from ten different location technology vendors, and only four of those responded with viable iDEN solutions.

With this limited interest in developing an iDEN-based location capability, Nextel has had very few options for possible ALI solutions. Even today, there is no location technology solution that has been fully integrated and tested on an iDEN handset or network that meets the Commission's accuracy requirements. To date, all testing of the A-GPS solution has been done using a CDMA handset and CDMA network. To fully integrate the capability into the iDEN handset and deploy it throughout Nextel's nationwide network, Motorola must develop a prototype iDEN handset with the A-GPS capability and modify the iDEN network infrastructure to support the over-the-air messaging that is inherent in this handset-based solution. Once that is completed (by second quarter 2001, according to Motorola), Motorola's development and production of the A-GPS handset will require at least 18 months. Therefore, the iDEN A-GPS capability will not be available in any Nextel handset before October 1, 2002.

Nextel's "technology-related issues," therefore, coupled with its proposal to assist PSAPs in achieving location readiness, have created the "exceptional

[14] Thus, despite the Commission's previously expressed belief that Nextel could simply purchase the location services of another manufacturer should "some major handset manufacturers prove unable or unwilling to produce ALI-capable handsets in the near future," Nextel has no handset options other than Motorola for a Phase II solution for its "island" technology. Fourth MO&O at para. 30. Herein, Nextel is providing the Commission the A-GPS deployment information that has been provided it by Motorola.

circumstances" necessary for a waiver of the Commission's Phase II rules.[15] Certainly, to the extent that the Commission concluded Voicestream's Phase II deployment plan – providing accuracy within only 1000 meters for all non-ALI capable handsets and 100 meter accuracy for its ALI-capable handsets – provides "meaningful" public safety benefits,[16] Nextel's proposal to provide 50 meter accuracy by October 2002 and its commitment to assist PSAPs in upgrading their own systems to accept wireless location information, also provides meaningful public safety benefits.

Additionally, Nextel's proposed deployment schedule is a "specific, focused and limited" request that provides "a clear path to full compliance,"[17] and it provides the Commission a set of milestones by which it can measure Nextel's compliance. In October 2002, Nextel will begin introduction of the A-GPS location capability in at least one handset model in its product line. This location-capable phone most likely will be a high-end unit sold at an approximately 25% higher price than a non-Phase II capable handset with a 30% increase in size. This cost and form factor/size increase result from the fact that Nextel's handsets use iDEN technology rather than technologies, such as CDMA, for which integrated A-GPS chipsets are available today. Because integrated chipsets are not currently available and Nextel/Motorola must attempt to integrate a standalone A-GPS chipset into an iDEN handset platform within the next year, the early versions of the A-GPS capable iDEN handset will be larger and more expensive than other iDEN handsets models. As a result, Nextel anticipates that its October 2002 location technology capable handsets will account for, at most, ten percent of all new activations.

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[15] Fourth MO&O at para. 43.
[16] *Id.* at para. 2.
[17] *Id.* at para. 44.

With additional time, Nextel and Motorola will achieve greater development and integration economies as the A-GPS logic is fully integrated into the baseband circuitry of the handset platform. Once this integration is achieved, the incremental cost per handset decreases to five to ten percent more than a non-ALI capable handset. This should result in the sale and activation of increasing numbers of ALI-capable handsets. By December 2003, when new integrated chipsets have become available and have been designed into future generations of iDEN handsets, additional location-capable handset models will be available, resulting in 50% of all new iDEN handsets sold having the location capability. By December 2004, all of Nextel's new iDEN handsets will be equipped with A-GPS, at a competitive cost to the consumer, thus ensuring that every new Nextel sale will provide its users with location capabilities.

Finally, because Nextel anticipates significant value-added commercial features to be introduced as a result of the A-GPS integration, existing Nextel subscribers should have an incentive to upgrade their handsets to the Phase II location-capable handsets after December 2003. Additionally, in that time frame, Nextel – like other carriers in the wireless marketplace – should be introducing 3G telecommunications services, which should further enhance consumer desire to upgrade to newer, location-capable mobile handsets. Thus, through the use of sales promotions, customer churn and equipment upgrades among existing subscribers, Nextel will meet the Commission's requirement that, by December 31, 2005, 95% of its customer base will be using Phase II capable handsets.

As explained herein, Nextel arrived at this deployment schedule after taking "concrete steps. . .to come as close as possible to full compliance."[18] Based on all of the information available to Nextel today, the A-GPS handset solution, once integrated into

[18] *Id.*

the iDEN handset, represents the best available solution for serving the location needs of public safety agencies to assist Nextel's subscribers. Because Nextel's proposal attempts to address all facets of the E911 process, thus improving the likelihood that wireless 911 callers will be located, the Commission should grant a waiver and permit the Phase II deployment schedule outlined herein.

In accordance with the Bureau's Public Notice, Nextel provides the following additional information:

(1) Nextel's Telecommunications Relay Services ("TRS") numbers:

(a) Nextel Communications of the Mid-Atlantic, Inc.: 815008
(b) Nextel of California, Inc.: 815010
(c) Nextel of New York, Inc.: 815009
(d) Nextel South Corp.: 815011
(e) Nextel of Texas, Inc.: 815007
(f) Nextel SoCal, Inc.: 811744
(g) Nextel West Corp.: 815012
(h) Nextel Partners, Inc.: 819244

(2) Nextel's Contact Information for E911 Phase II Deployment:

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III. SUPPORT FOR NEXTEL'S HANDSET TECHNOLOGY CHOICE

Chronology of Nextel's Investigation. Nextel reached its decision to deploy A-GPS in its handsets beginning October 2002 after much research and analysis. Beginning in 1998, Nextel assigned specific Nextel technical personnel to the task of reviewing all potential iDEN location options. In the fourth quarter of 1998, Nextel issued specific Requests for Information ("RFIs") to ten different potential location vendors. All but one of the vendors provided network-based ALI solutions since the Commission's

rules, at the time, did not permit a phased-in Phase II solution via handset technologies. In addition to those ten RFIs, Nextel also reviewed a potential Enhanced Observed Time Difference ("E-OTD") handset-based ALI solution, similar to that used by GSM systems, that was being developed by its iDEN vendor, Motorola. Of the responses to its RFIs, only four showed any promise of fulfilling Nextel's E911 Phase II location needs on the iDEN platform – one handset-based solution and three network-based solutions.

In the first quarter of 1999, Nextel issued requests for additional detail to the three network overlay vendors, asking that each describe their planned location trial and provide a single city rollout plan as well as a nationwide rollout plan.[19] After reviewing and validating each plan, Nextel invited these three network overlay vendors and the handset vendor to participate in a Nextel sponsored independent trial of their solutions. At that time, one of the three vendors indicated that, prior to developing and testing an iDEN solution, it would be necessary for Nextel to commit to either paying for the development effort or purchase a set quantity of location-capable units.[20] Because Nextel was unable to make such a commitment without any assurance that the solution would work, this vendor declined to participate in Nextel's technology trial. The remaining two network overlay vendors initiated development of an iDEN-specific location solution, and Nextel began developing and deploying the temporary infrastructure modifications necessary to support a network overlay trial.

In February 2000, another of the network-based vendors dropped out of the trial process because they would not have sufficient hardware available for the trial within a

[19] Nextel did not need to seek additional information from the handset vendor under consideration because (a) the solution would not require the significant network modifications that were necessary to test network-based location technologies; and (b) it was not clear whether the Commission's rules would permit the use of handset-based technologies.

[20] This requirement was driven by the vendor's perception that only one location vendor would ultimately succeed in selling the iDEN solution (to any provider(s)), resulting in "wasted" resources and development efforts by the unsuccessful vendors – yet another aspect of using an "island" technology such as iDEN.

time frame that would permit Nextel to evaluate it and reach a decision prior to submitting this Report. This left Nextel with only three potential location solutions: a handset-based solution, albeit one designed for CDMA networks; a network overlay solution; and Motorola's proposed E-OTD network solution.

Nextel's Technology Trials. Nextel conducted a field trial of each of these potential solutions in the Washington D.C. area during the second and third quarters of 2000. The trial was designed, managed and the results evaluated by an independent consulting firm with recognized expertise in location systems. The actual data collection during the trial was conducted by a second independent consulting firm rather than the employees of the location vendors or Nextel. This design was intended to ensure that the parties generating and collecting the data were different from those evaluating it. Additionally, Nextel was not attempting to prove any pre-established conclusions about any of the technology options; Nextel intended to reach conclusions about the ability of each solution to operate in varying environments and under varying conditions.

The trial area consisted of 33 stationary locations (both indoor and outdoor sites) and three mobile routes, with ten data points collected at each position three times over three days, varying the day of the week and the time of day. The geographic test area, moreover, encompassed the downtown area of DC (representing an urban environment), the suburban areas of Northern Virginia (representing a suburban setting) and the uninhabited island areas of the Potomac River (simulating a rural environment). Thus, the test area attempted to replicate varying environments and test each solution's accuracy and reliability under these varying conditions.[21]

[21] The geographic expanse of Nextel's trial area was limited by the modifications necessary to deploy a network overlay location solution on a trial basis. To deploy a network overlay solution, Nextel has to modify its base station controllers to ensure that the serving cell site, the radio frequency and the slot of the 911 call are provided to the controller in order to determine the caller's location. Thus, Nextel limited its test area to the geography covered by a single base station controller in the Washington D.C. area.

First, Nextel tested the CDMA-based A-GPS handset solution -- recognizing that, if successfully tested, it would have to be modified and integrated into the iDEN technology handset. Soon thereafter, Nextel completed testing of the network overlay solutions. The results of these trials led Nextel to an inescapable conclusion: among the limited alternatives for its iDEN network, only the A-GPS solution integrated into the iDEN handset would meet the public interest goals underlying the Commission's Phase II ALI requirements and provide Nextel's subscribers with an accurate, economically acceptable Phase II E911 solution.

A-GPS Handset Solution. Based on all of the information Nextel has compiled over the previous three years, Nextel will implement the handset-based A-GPS ALI solution, as described above. Although Nextel cannot implement this solution by the Commission's October 1, 2001 date, this is Nextel's only proven location technology option, and it will be available within a reasonable time frame. Prior to the time that Motorola can integrate A-GPS functionality into the baseband circuitry of the iDEN handset platform, the A-GPS capability will have to be implemented by the addition of specialized chips into an iDEN handset platform. Adding these chips to existing handset platforms will impact the handset's form factor, size, weight, battery life and cost, thus retarding penetration rates early on as Nextel's marketing studies suggest that consumers will be unlikely to purchase a larger, more expensive phone even if it has location capabilities.

Nextel strongly believes that once the A-GPS logic has been integrated into the baseband processor of the iDEN handset, prices will decline, the size of the phone will decrease and the attractiveness of the location-capable handset to consumers will increase. Motorola has informed Nextel that A-GPS logic can be integrated into the baseband processor of future generation handsets in mid-2003. Thus, soon thereafter, a number of Nextel's handset models will be ALI-capable, resulting in 50% of new

activations being ALI-capable by December 2003, increasing to 100% by December 2004 and, ultimately, 95% of the entire Nextel customer base will be using Phase II-capable handsets by December 31, 2005.

Motorola's iDEN E-OTD Solution. Nextel considered the use of an E-OTD solution similar to that proposed by Voicestream. Motorola's iDEN technology is GSM-based, but it has significant technological differences from the standard GSM technologies used worldwide, and the specific air interface technology plays an important role in location accuracy with E-OTD. The critical distinctions are the fact that iDEN channels sizes are one-eighth the size of GSM channels, the differing air interfaces of iDEN and GSM, and the timing mechanisms that are located at the cell sites in each network. The timing capabilities in a GSM network are more sensitive and, when coupled with a significantly greater channel width, can provide more accurate location information in an E-OTD context.

On an iDEN system, according to Motorola's simulation model testing, the estimated accuracy provided by an iDEN E-OTD solution is an average of 382 meters 67% of the time and 1327 meters 95% of the time, without deploying significant infrastructure changes. Over time, with additional infrastructure changes to enhance the timing synchronization at each iDEN cell site, the accuracy can be improved to an average of 147 meters 67% of the time and 643 meters 95% of the time. The E-OTD accuracy of iDEN technology varies significantly between dense urban, urban, suburban and rural environments.[22]

[22] Estimated initial accuracy without the infrastructure changes to enhance the timing synchronization provide 372 meters in dense urban areas, 257 meters to 262 meters in urban areas, 294 meters in suburban areas and 693 meters in rural areas – for an average of 382 meters 67% of the time. With the enhancing timing mechanisms, the accuracy levels are 328 meters in dense urban areas, 134 meters to 159 meters in urban areas, 122 meters in suburban areas and 174 meters in rural areas – for an average of 147 meters 67% of the time.

As shown above, the accuracy provided by an iDEN E-OTD solution is less accurate than the network-based accuracy requirement of 100 meters 67% of the time. Moreover, Motorola's accuracy estimates are based solely on laboratory simulations. Motorola and Nextel have not had an opportunity to test the most recent version of the E-OTD solution in an iDEN handset in a field trial. More importantly, in addition to providing inferior location accuracy, the E-OTD solution creates a delay in the 911 caller's call set-up time. Because E-OTD must perform its location measurement prior to call set-up, a customer's 911 call could be delayed by as much as three seconds. This result is in stark contrast to the Commission's goal of achieving E911 services that "accurately and quickly [provide PSAPs] the location of the emergency…"[23]

As a result, Nextel has concluded that moving forward with E-OTD implementation is not in the best interests of its subscribers. The 382 meter and 147 meter location capabilities provide public safety agencies insufficient incremental benefit over Phase I E911,[24] and E-OTD's call set-up delays increase the risk that the caller will not reach the PSAP in time to access the necessary emergency assistance. Additionally, a decision to deploy E-OTD on an interim basis would also delay Nextel's ultimate deployment of the more accurate A-GPS solution to fourth quarter 2003, thus delaying the provision of 50-meter location accuracy to PSAPs. The public interest is better served by Nextel's deployment of A-GPS in October 2002.

Network Overlay Solutions. Nextel analyzed and considered implementation of two other network overlay solutions. One of these solutions was field tested by Nextel in the Washington DC-area, while the other, as previously noted, was not prepared to proceed with testing at the time of Nextel's field trials. The most significant obstacles to implementing either of these solutions are the accuracy capabilities they would provide

[23] Third Report and Order at para. 2.
[24] *See* Exhibit A.

Nextel's customers and the scope of network and infrastructure deployment they would require. In the field trial earlier this year, the network overlay solution could not locate the caller within 100 meters 67% of the time. The test results indicated that the best location capabilities it could provide were 120 meters 67% of the time and 442 meters 95% of the time.[25]

As a nationwide carrier, Nextel would have to deploy a network overlay solution over thousands of cell sites and base station controllers. Obtaining zoning approvals, deploying new equipment, upgrading base station controllers and the other efforts involved in upgrading Nextel's network would require substantial time and effort by numerous Nextel personnel. Achieving any such network overlay deployment within six months of a PSAP request, as required by the Commission's rules, simply is not feasible. Additionally, Nextel's cost of implementing a network-wide overlay solution would be prohibitive – particularly when it is not clear whether PSAPs will be prepared to accept the location information.

Arguably, Nextel could choose to implement a network solution on a piecemeal basis – jurisdiction-by-jurisdiction as capable PSAPs request Phase II. However, such piecemeal implementation is not in the public interest as it could create confusion among wireless users, will create new "battles" between wireless carriers and PSAPs regarding the Phase II capabilities of the PSAP and, therefore, the carrier's requirement to deploy an overlay network, and it would ultimately delay a consistent, uniform implementation of Phase II E911 services throughout the U.S. Nextel does not believe a slow rollout of network location capabilities serves the public interest.

[25] Since those field trials, the vendor has come back to Nextel with claims that it can make changes to the technology that would permit location within 100 meters 67% of the time. These claims, however, have not been verified either in a field trial or in simulations, and there is no confidence that the solution could, in many cases, provide accuracy of better than 100 meters.

IV. CONCLUSION

Accurate location information and the PSAP's ability to use it are the key ingredients to locating wireless callers and saving lives. Nextel's proposal addresses both of these issues. Nextel, therefore, respectfully requests that the Commission waive its Phase II E911 implementation deadline and allow Nextel to deploy A-GPS location technology in its iDEN handsets pursuant to the schedule herein.

Respectfully submitted,

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Date: November 9, 2000